MISSOURI DEPARTMENT OF TRANSPORTATION
MATERIALS ENGINEERING
Jefferson City, Missouri

Test Method
MoDOT T27
DETERMINATION OF CALCIUM OXIDE AND MAGNESIUM OXIDE IN HYDRATED LIME

1. SCOPE

This method describes a procedure for determining the Non-Volatile content of Hydrated Lime, and the percentages of Calcium Oxide and Magnesium Oxide in that Non-Volatile.

2. REAGENTS AND APPARATUS

(a) Platinum Crucible, 20-30 ml volume, with cover

(b) Reagents and Apparatus as described in Test Method MoDOT T26

3. PROCEDURE FOR NON VOLATILE

Weigh, to the nearest 0.1 mg, 1 gm of the sample, and transfer to a tarred platinum crucible. Cover the crucible and place in an electric muffle furnace. Bring the furnace to a temperature of 1100-1150°C, and maintain at that temperature for ca 15 minutes. Cool the crucible and residue in a dessicator, and weigh to the nearest 0.1 mg.

4. CALCULATIONS

Calculate the Non-Volatile as follows:

$$\% \text{ Non-Volatile} = \frac{(\text{Weight of Crucible \& Residue}) - \text{Wt. of Crucible}}{\text{Weight of Sample}} \times 100$$

5. PROCEDURE FOR CALCIUM OXIDE AND MAGNESIUM OXIDE

Determine the Calcium and Magnesium in the Hydrated Lime by the procedure described in Test Method MoDOT T26.

6. CALCULATIONS

Make the following calculations:

$$\% \text{ CaO} = \frac{\text{Tca X Fca}}{\% \text{ Non-Volatile}} \text{ X } 100$$

Report as:

% Calcium Oxide (CaO), based on Non-Volatile

$$\text{MgO} = \frac{(\text{Tmg - Tca - K}) \text{ X Fmg}}{\% \text{ Non-Volatile}} \text{ X } 100$$

Report as:

% Magnesium Oxide (MgO), based on Non-Volatile